



ROUTE RECON

TD 925



MILITARY POLICE FUNCTIONS

- MANEUVER AND MOBILITY SUPPORT
- AREA SECURITY
- LAW AND ORDER
- INTERNMENT AND RESETTLEMENT OPERATIONS
- POLICE INTELLIGENCE OPERATIONS



MANEUVER AND MOBILITY SUPPORT

- ROUTE RECONNAISSANCE AND SURVEILLANCE
- MSR REGULATION AND ENFORCEMENT
- STRAGGLER AND DISLOCATED CIVILIAN CONTROL
- AREA DAMAGE CONTROL



ROUTE RECONNAISSANCE



ROUTE RECONNAISSANCE

- ROAD
CONDITIONS/CAPABILITIES
- ENEMY ACTIVITY
- CONTAMINATED AREAS
- CRITICAL POINTS/
OBSTRUCTIONS
- POTENTIAL AMBUSH SITES



RECONNAISSANCE

- A MISSION UNDERTAKEN TO OBTAIN, BY VISUAL OBSERVATION OR OTHER DETECTION METHODS, INFORMATION ABOUT THE ACTIVITIES AND RESOURCES OF AN ENEMY OR POTENTIAL ENEMY OR TO SECURE DATA CONCERNING THE METEOROLOGICAL, HYDROGRAPHIC, OR GEOGRAPHIC CHARACTERISTICS OF A PARTICULAR AREA.
- CONSISTS OF ALL DIRECTED EFFORTS IN THE THEATER TAKEN TO COLLECT INFORMATION ON THE ENEMY AND THE AREA OF OPERATIONS
 - IT PRODUCES INTELLIGENCE
 - IT IS A CONTINUOUS RESPONSIBILITY



TYPES OF RECONNAISSANCE

- ROUTE
- ZONE
- AREA



ROUTE RECONNAISSANCE

- OBTAINS INFORMATION ABOUT ENEMY ACTIVITY, OBSTACLES (INCLUDING NBC), ROUTE CONDITIONS, AND CRITICAL TERRAIN FEATURES ALONG A SPECIFIC ROUTE.



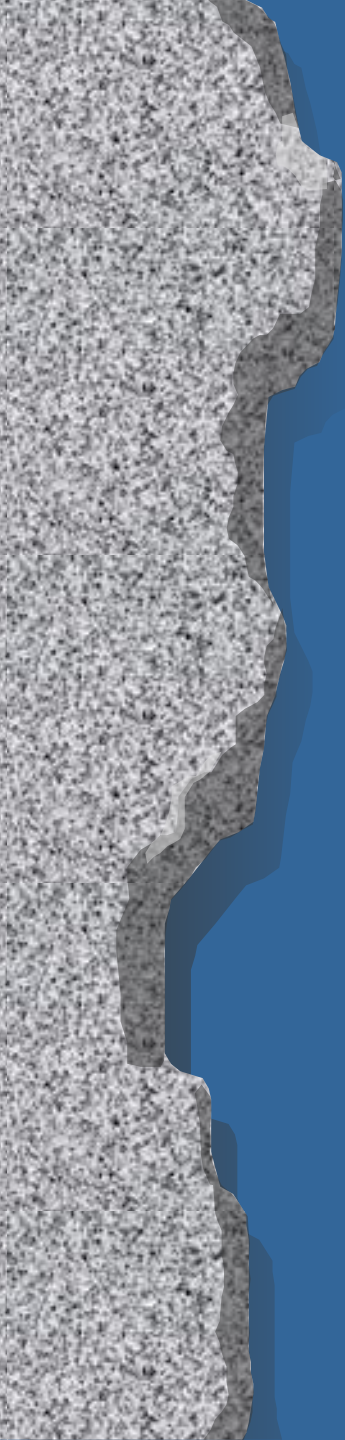
ZONE RECONNAISSANCE

- A MISSION CONDUCTED TO GAIN DETAILED INFORMATION ABOUT NATURAL AND MANMADE FEATURES, AND ENEMY PRESENCE/ACTIVITY WITHIN A SPECIFIC BOUNDARY



AREA RECONNAISSANCE

- A MISSION CONDUCTED TO GAIN INFORMATION ABOUT A SPECIFIC LOCATION AND THE TERRAIN IMMEDIATELY SURROUNDING IT.



METHODS OF RECONNAISSANCE

- MAP
- GROUND
- AIR
- AIR-GROUND



ROUTE RECONNAISSANCE REPORT

- HASTY
- DELIBERATE



ROUTE RECONNAISSANCE REPORT

- HASTY (MP'S CONDUCT HASTY RECON)
 - OVERLAY
 - ROAD RECON REPORT (DA FM 1248) (MPs)
 - ENGINEER RECON REPORT (DA FM 1711-R) (ENGR)
- DELIBERATE
 - OVERLAY
 - ENGINEER RECON REPORT (DA FM 1711-R)
 - ROAD RECON REPORT (DA FM 1248)
 - BRIDGE RECON REPORT (DA FM 1249)
 - TUNNEL RECON REPORT (DA FM 1250)
 - FOOD RECON REPORT (DA FM 1251)
 - FERRY RECON REPORT (DA FM 1252)



PURPOSE OF ROUTE RECONNAISSANCE

- Assist in development of Traffic Control Plan
- Update Traffic Circulation Plan
- Used to formulate Highway Traffic Regulation Plan



PLANNING CONSIDERATIONS FOR ROUTE RECON

- Find and report all enemy forces
- Determine trafficability
- Reconnoiter lateral routes to limit of direct fire
- Inspect all bridges
- Locate fords or crossing sites near bridges
- Inspect overpasses, underpasses and culverts
- Locate holding areas
- Locate mines, obstacles and barriers
- Locate bypasses
- Report up all information



ROAD CLASSIFICATION FORMULA

- LIMITING CHARACTERISTICS
- WIDTH
- ROAD SURFACE MATERIAL
- LENGTH
- OBSTRUCTIONS
- BLOCKAGE



ROAD CLASSIFICATION FORMULA

Bcg 8/9 K (5.2KM) (OB) (W)



ROAD CLASSIFICATION FORMULA EXAMPLES

- A14/16 nb (6.2KM)
- Bfd (c?) 10/12 pb (7.05KM) (OB) (W)
- Bg 7/9 k (4.3KM) (OB) (T)



ROUTE CLASSIFICATION FORMULA

7m Y 70 6m (OB) (W)



ROUTE CLASSIFICATION FORMULAS

7m Y 70 6m (OB) (W)

- MINIMUM TRAVELED WAY WIDTH
- ROUTE TYPE
 - X: ALL WEATHER
 - Y: LIMITED ALL WEATHER
 - Z: FAIR WEATHER
- LOWEST LOAD CLASSIFICATION
- LOWEST OVERHEAD CLEARANCE

ROUTE CLASSIFICATION FORMULA (Cont.)

- OBSTRUCTIONS

- OVERHEAD CLEARANCE LESS THAN 4.3 METERS
- EXCESSIVE GRADES 7 % OR GREATER
- SHARP CURVES WITH RADIUS OF 25 METERS OR LESS

- TRAVELED WAY WIDTHS LESS THAN

	<u>WHEELED</u>	<u>TRACKED</u>		<u>FLOW</u>
			SINGLE	5.5M= 18
			DOUBLE	7.0M= 23
FT	6.0M=	19.5 FT		
FT	8.0M=	26FT		

- BLOCKAGE
 - W= FLOODING
 - T= SNOW



ROUTE CLASSIFICATION FORMULA EXAMPLES

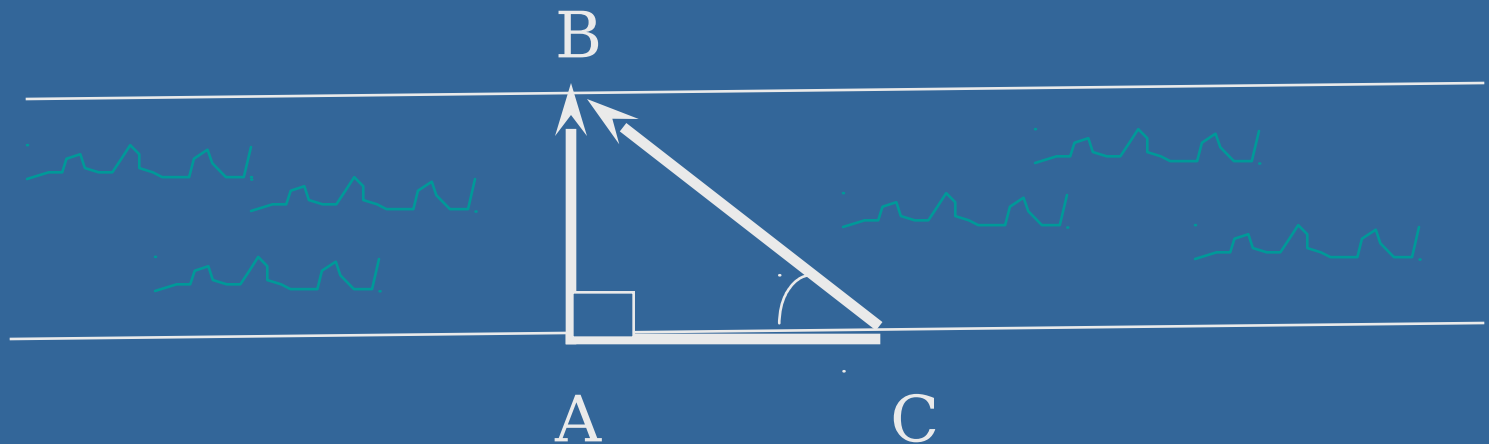
- 8m X 70 5.3m
- 5.2mY 45 5.0m (OB) (T)
- 4m Z 50 5.5m (OB) (W)
- 6m Y 50 4.2m (OB) (W)
- 6.5m X 60 (∞ W)

- T)



RECONNAISSANCE FORMULAS

WIDTH OF STREAM FORMULA



A IS THE POINT ON THE NEAR SHORE
B IS THE POINT ON THE FAR SHORE
AB IS THE DISTANCE TO BE MEASURED

AZIMUTH OF AB IS 315°

AZIMUTH OF CB IS 270°

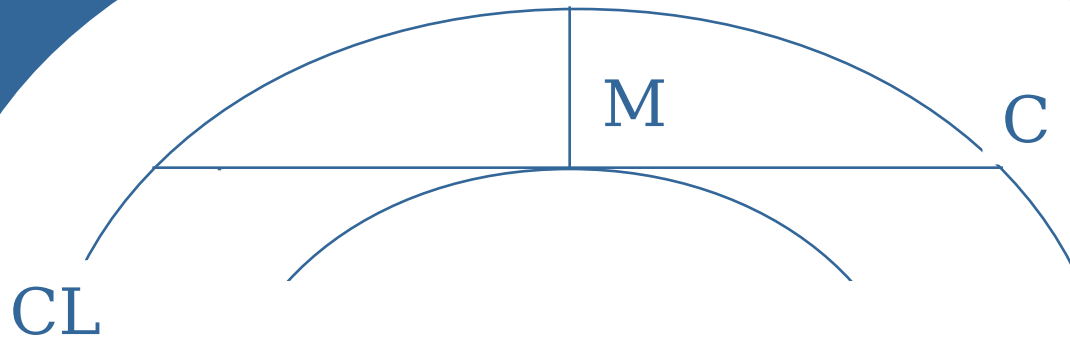
DIFFERENCE BETWEEN AZIMUTH AB AND CB IS 45°
DISTANCE ALONG AC EQUALS DISTANCE ALONG AB

RADIUS OF A CURVE

FORMULA

$$R = \frac{\underline{C}^2}{8M} + \frac{\underline{M}}{2}$$

RADIUS OF A CURVE



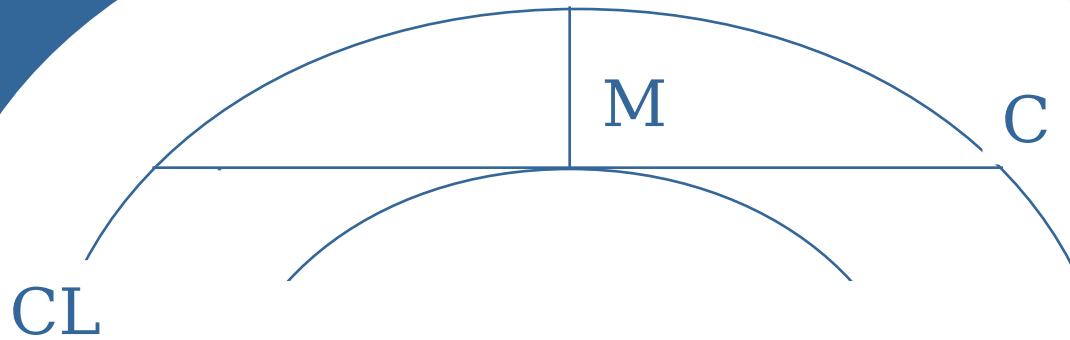
$$R = \frac{C^2}{8M} + \frac{M}{2}$$

M=MIDDLE
ORDINATE

C= CHORD

CL= CENTERLINE

RADIUS OF A CURVE



$$R = \frac{C^2}{8M} + \frac{M}{2}$$

M=MIDDLE
ORDINATE

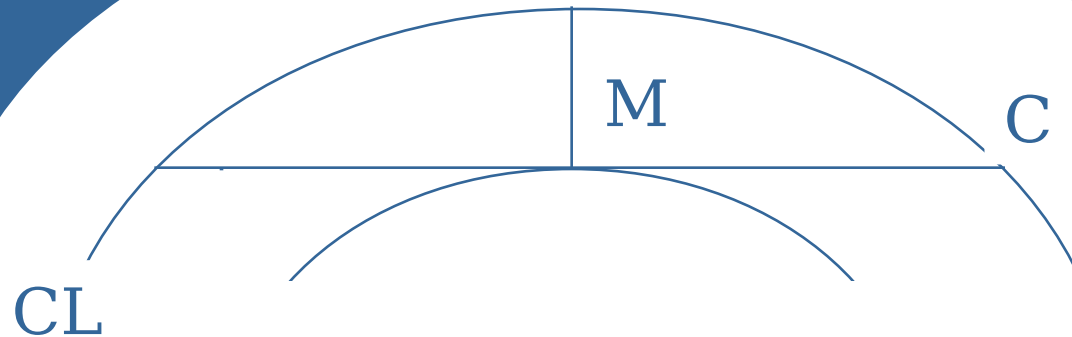
C= CHORD

CL= CENTERLINE

$$M = 3$$

$$C = 15$$

RADIUS OF A CURVE



$$R = \frac{C^2}{8M} + \frac{M}{2} = 9.375 + 1.5$$

$$= \frac{15 \times 15}{8 \times 3} + \frac{3}{2} = 10.875$$

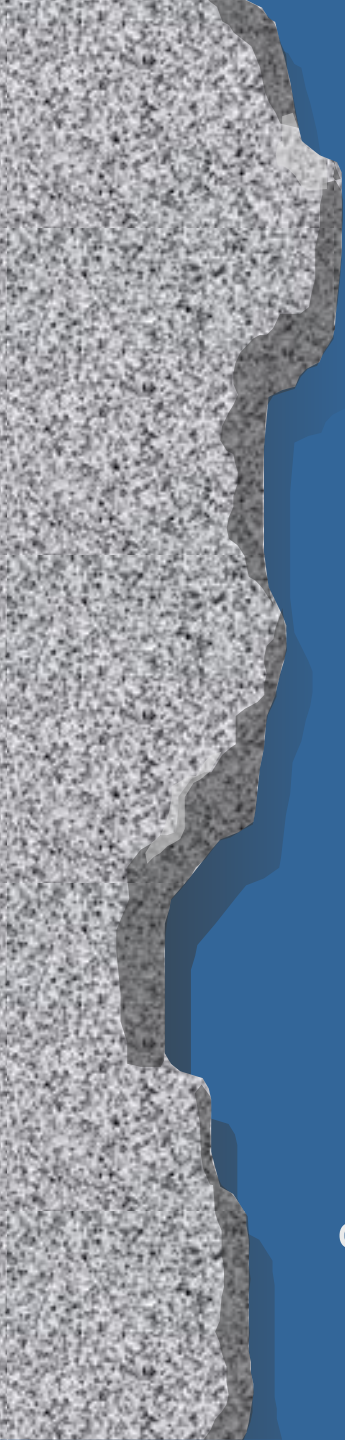
$$= \underline{10}$$

$$= \frac{225}{24} + 1.5$$

M=MIDDLE
ORDINATE

C= CHORD

CL= CENTERLINE



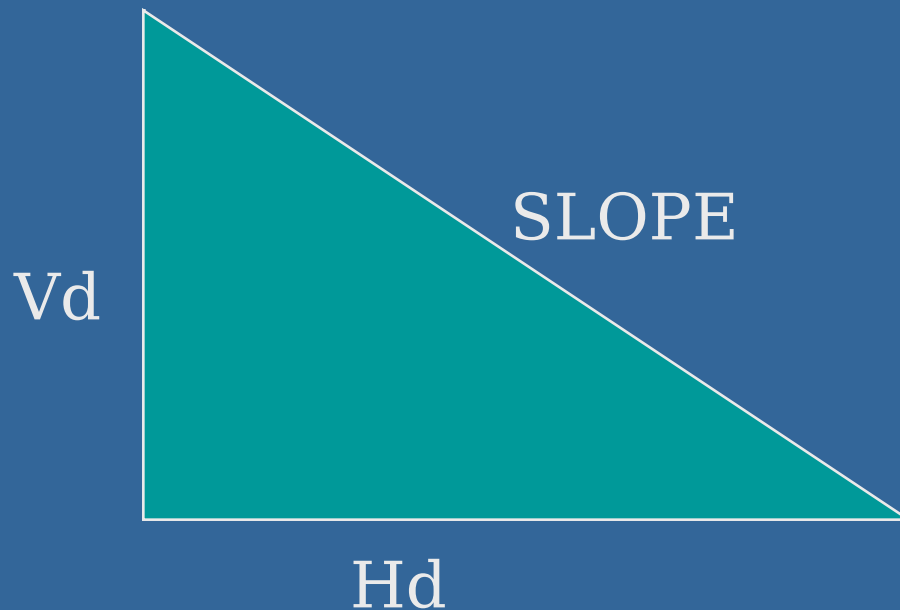
%
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DETERMINE PERCENT OF SLOPE

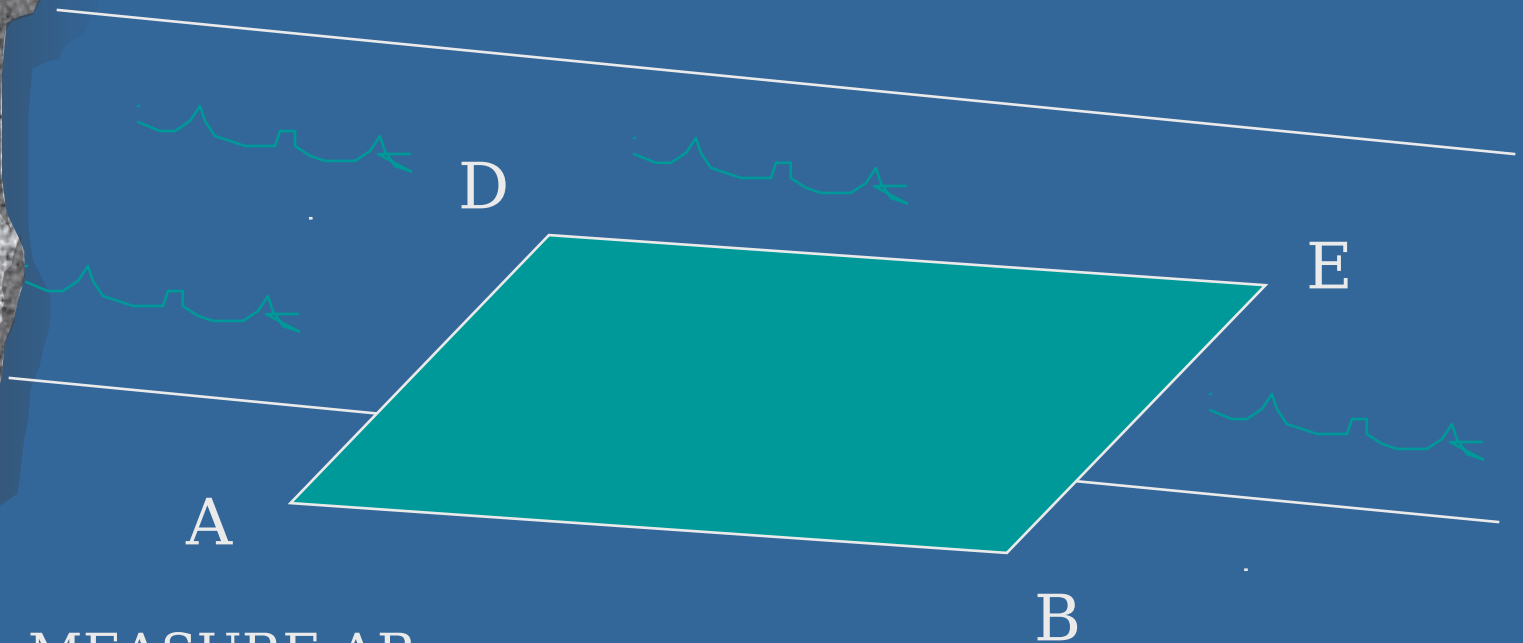
%
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PERCENT OF SLOPE FORMULA

PERCENT OF SLOPE= $\frac{\text{VERTICAL DISTANCE (Vd)}}{\text{HORIZONTAL DISTANCE (Hd)}} \times$



DETERMINE STREAM VELOCITY



- MEASURE AB
- THROW FLOATING OBJECT (EX.: A STICK) UPSTREAM OF START POINT
- RECORD TIME FOR OBJECT TO FLOAT FROM D TO E

CURRENT $\frac{\text{DISTANCE AB (IN METERS)}}{\text{TIME DE (IN SECONDS)}}$



OVERLAY REQUIREMENTS

- MAGNETIC NORTH ARROW
- TWO GRID REFERENCE POINTS
- ROUTE DRAWN TO SCALE
- TITLE BLOCK CONTAINING
 - NAME
 - SOCIAL SECURITY #
 - UNIT
 - DATE AND TIME OF RECON
 - MAP AND EDITION
 - MAP SCALE
- ROUTE CLASSIFICATION FORMULA



OVERLAY SYMBOLS

FM 19-
4



ROUTE RECONNAISSANCE OVERLAY

- ACCURATE AND CONCISE REPORT OF TRAFFIC CONDITIONS
- CONTAINS SPECIAL SYMBOLS IN THE FOLLOWING SLIDES

SHARP CURVES



- FIGURE INDICATES RADIUS OF CURVE IN METERS



- LEFT FIGURE INDICATES THE NUMBER OF CURVES, RIGHT FIGURE INDICATES RADIUS IN METERS OF SHARPEST CURVE

GRADES

5% < GRADE < 7%

6%



7% < GRADE < 10%

9%



10% < GRADE < 14%
11%



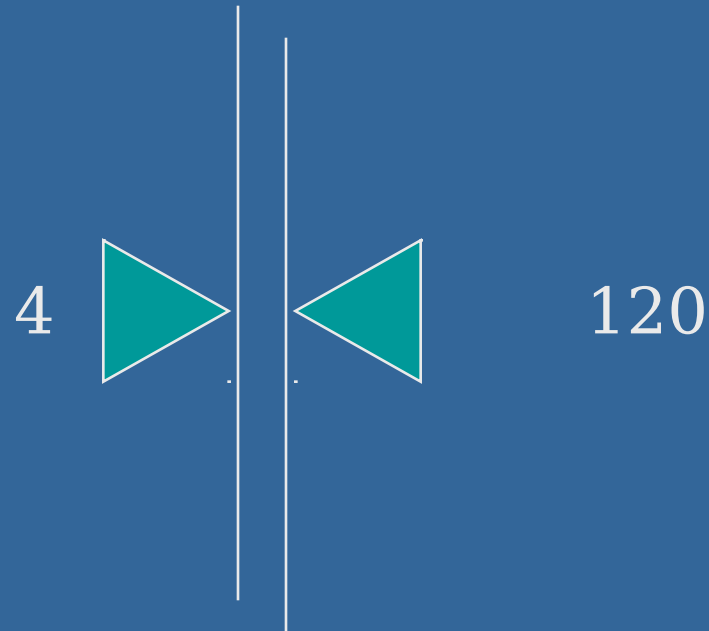
14 < GRADE

17%



ARROWS POINT UP HILL
THE ACTUAL % OF THE GRADE IS WRITTEN
BESIDE THE SYMBOL
THE LENGTH OF THE ARROW REPRESENTS
THE LENGTH OF THE GRADE IF
THE MAP SCALE PERMITS

WIDTH CONSTRICTIONS

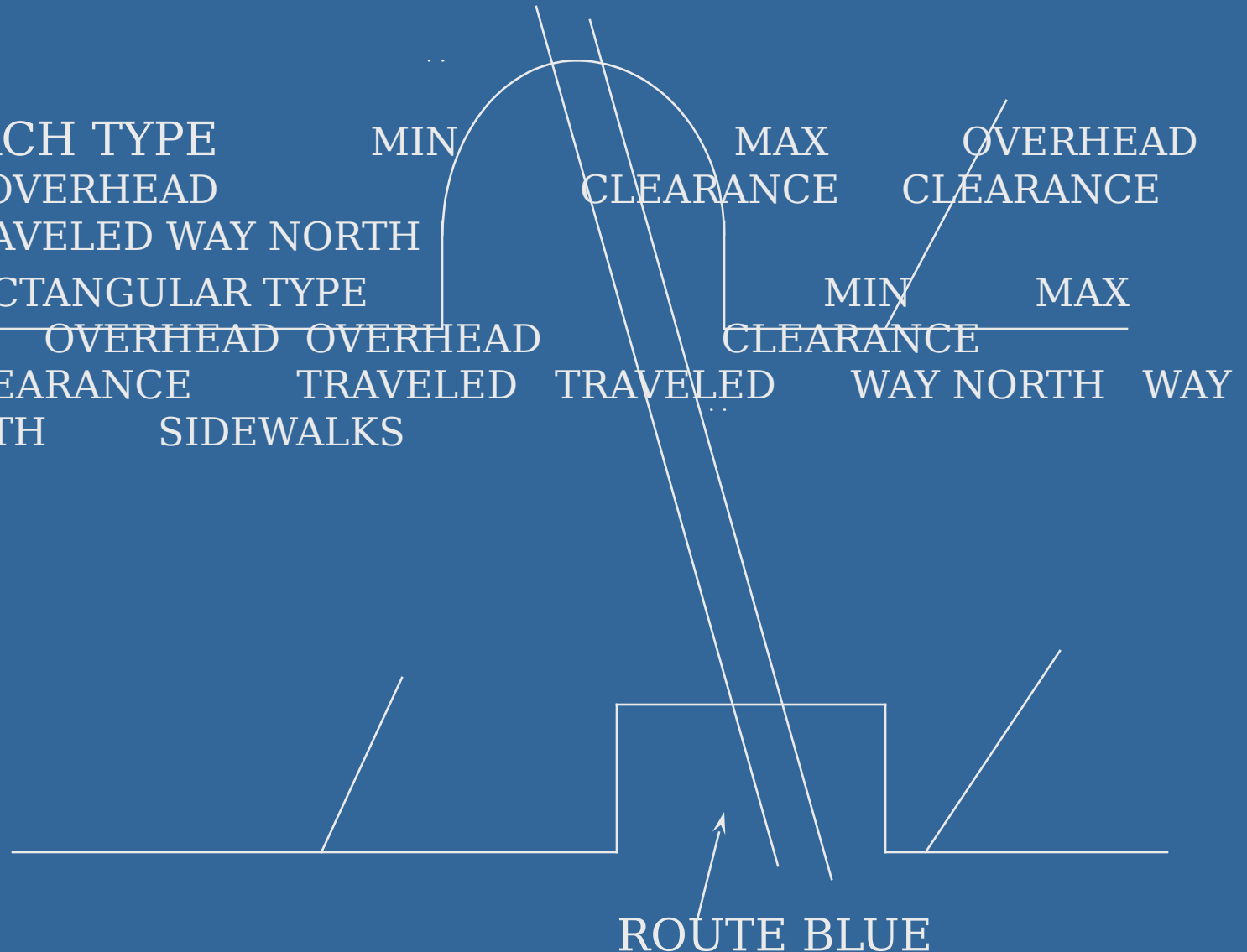


- THE FIGURE ON THE LEFT INDICATES THE WIDTH OF THE CONSTRICTION IN METERS
- FIGURE ON RIGHT INDICATES TOTAL CONSTRICTED LENGTH IN METERS

UNDERPASS SYMBOL

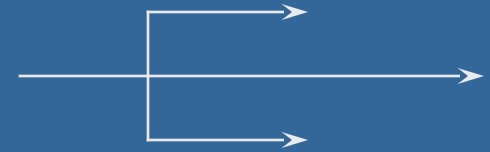
(INCLUDE SIDEWALKS IF PRESENT)

- ARCH TYPE OVERHEAD TRAVELED WAY NORTH
- RECTANGULAR TYPE OVERHEAD CLEARANCE TRAVELED WAY NORTH WITH SIDEWALKS



BYPASS CONDITIONS

- BYPASS EASY



- BYPASS DIFFICULT



- BYPASS IMPOSSIBLE



-USED IN RECONNAISSANCE WITH BRIDGE AND
TUNNEL RECONNAISSANCE SYMBOLS




EASY BYPASS

THE OBSTACLE CAN BE
CROSSED WITHIN THE
IMMEDIATE VICINITY OF
THE BRIDGE BY A U.S. 2.5
TON TRUCK WITHOUT
WORK TO IMPROVE THE
BYPASS AREA



DIFFICULTY BYPASS

THE OBSTACLE CAN BE
CROSSED WITHIN THE
IMMEDIATE VICINITY OF
THE BRIDGE BUT SOME
WORK WILL BE NECESSARY
TO PREPARE THE BYPASS
AREA



IMPOSSIBLE BYPASS

THE BRIDGE CAN ONLY BE CROSSED
BY ONE OF THE FOLLOWING
METHODS:

- REPAIR THE EXISTING BRIDGE
- CONSTRUCT A NEW BRIDGE
- TAKE A BRIDGE DETOUR SOME
DISTANCE FROM THE OBSTACLE

TUNNEL SYMBOL

The diagram illustrates the components of a tunnel symbol on a map. The symbol is represented by a thick, dark line with a textured, stippled appearance. Labels and their corresponding parts are as follows:

- BYPASS CONDITIONS**: Points to the top of the tunnel symbol.
- SERIAL**: Points to the top of the tunnel symbol.
- NUMBER**: Points to the top of the tunnel symbol.
- LOCATION**: Points to the top of the tunnel symbol.
- LENGTH**: Points to the top of the tunnel symbol.
- TRAVELED**: Points to the top of the tunnel symbol.
- WITH**: Points to the top of the tunnel symbol.
- MIN OVERHEAD CLEARANCE**: Points to the minimum clearance height of the tunnel.
- MAX OVERHEAD CLEARANCE**: Points to the maximum clearance height of the tunnel.
- TRAVELED**: Points to the tunnel symbol.
- WAY WIDTH**: Points to the width of the tunnel.
- WAY**: Points to the width of the tunnel.
- SIDEWALKS**: Points to the width of the tunnel.

BYPASS CONDITIONS

MIN
OVERHEAD

MAX OVERHEAD

SERIAL

CLEARANCE

CLEARANCE

NUMBER	LOCATION	LENGTH
--------	----------	--------

TRAVELED

TRAVELED

WAY WIDTH

WAY

WITH

SIDEWALKS

LEVEL GRADE RAILROAD CROSSING

- WITHOUT OVERHEAD OBSTRUCTIONS



- OVERHEAD OBSTRUCTION OF 4.5 METERS (L.E. POWER LINES)--IF OBSTRUCTION IS <4.3 METERS TALL, UNDERLINE IT



FORD SYMBOL

LEFT
APPROACH
CONDITIONS
(EASY)

SER
NO

TYPE
OF
FORD

NORMAL
STREAM
VELOCITY

SEASONAL RIG
LIMITING APP
FACTORS CONDITION
(DIFFICULT)

LENGTH

WIDTH

NATURE
OF
BOTTOM

NORMAL
DEPTH OF
WATER

TYPE OF FORD:

V--VEHICLE FORD

P--PEDESTRIAN FORD

NATURE OF BOTTOM:

C--CLAY

G--GRAVEL

M--MUD

R--ROCK

P--ARTIFICIAL

PAVING

S--SAND

SEASONAL LIMITING FACTORS:

X--NONE EXCEPT FOR LIMITED DURATION AFTER FLASH
FLOODING

Y--SIGNIFICANT SEASONAL LIMITATIONS

OFF-ROAD MOVEMENT

- POSSIBILITY OF DRIVING OFF-ROAD



THE SYMBOL MAY BE AMPLIFIED AS FOLLOWS:

- WHEELED VEHICLE



- TRACKED VEHICLE

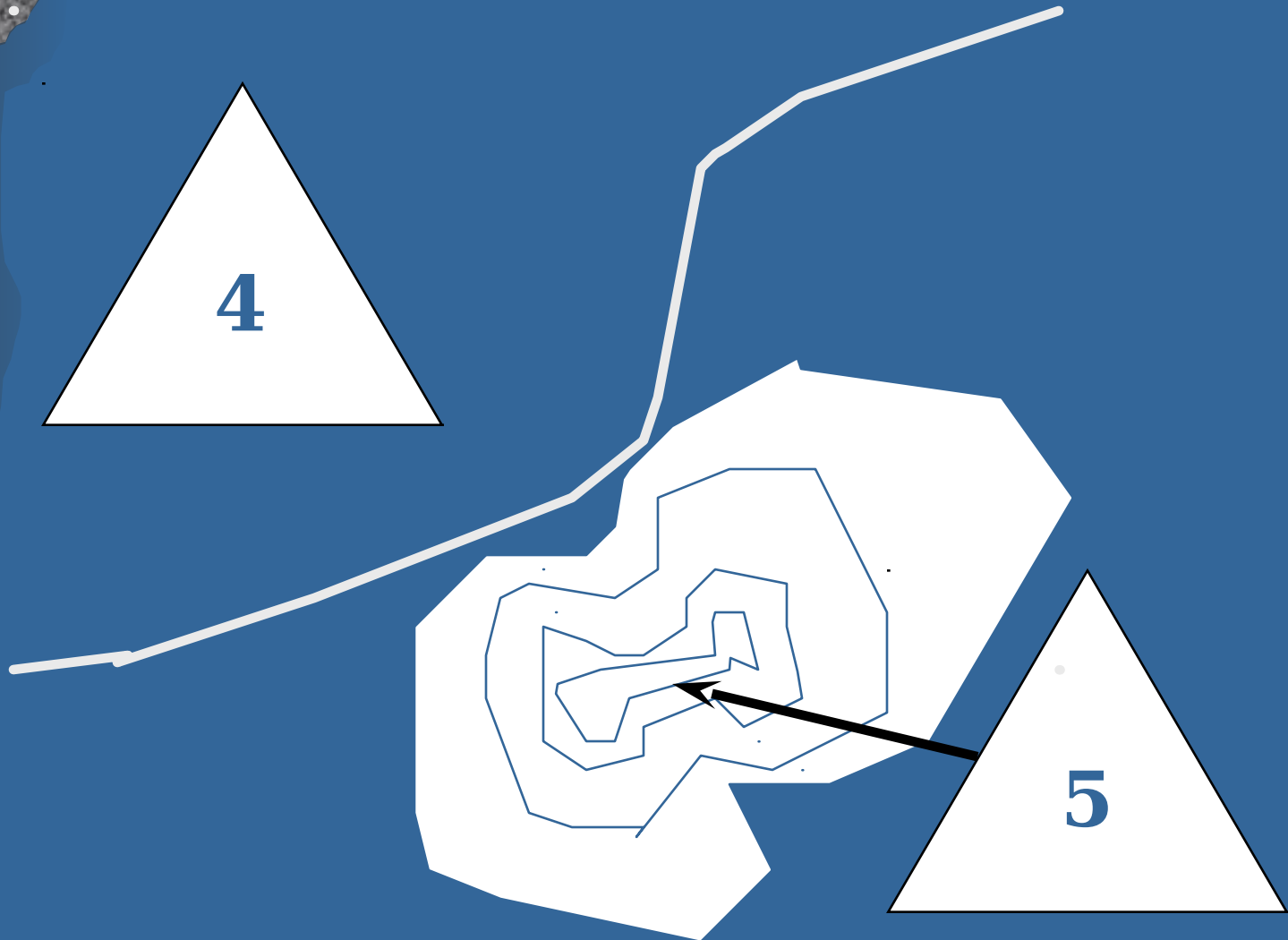


- A LENGTH OF ROAD EXCEEDING
1 KM WHERE DRIVING OFF IS POSSIBLE



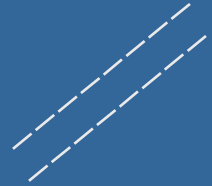
ARROWS INDICATE DIRECTION OF TURNOFF
THE FIGURE INDICATES THE LENGTH IN METERS OF THE TURNOFF

CRITICAL POINTS

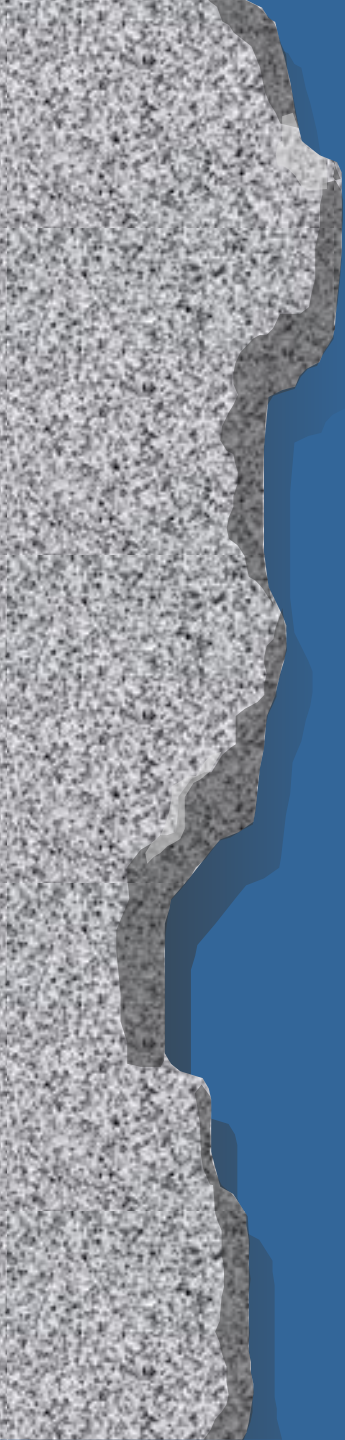


OBSTACLE SYMBOLS

- PROPOSED
- PREPARED BUT POSSIBLE
- COMPLETED ROADBLOCK, CRATERS, AND BLOWN BRIDGES
CENTER OF THE SYMBOL INDICATES POSITION OF BLOCK

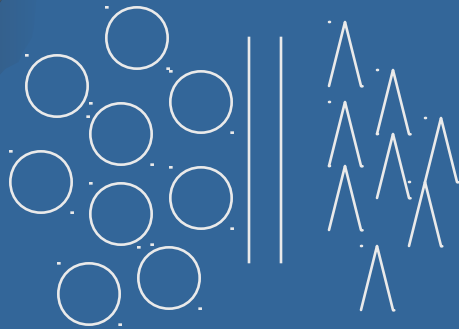


A vertical graphic element with a torn-edge effect. The left side is a solid blue color, while the right side is a grey, textured surface that appears to be peeling or torn away from the blue background. The texture is grainy and uneven, resembling a rough material like paper or fabric.



A vertical graphic element with a torn-edge effect. The left side is a solid blue color, while the right side is a grey, textured surface that appears to be peeling or torn away from the blue background. The texture is grainy and uneven, resembling a rough material like paper or fabric.

CONCEALMENT



WOODS BORDERING ROADS



ROAD LINED WITH TREES

DECIDUOUS TREES (LEFT) AND EVERGREEN TREES (RIGHT)

THESE SYMBOLS MAY ALSO BE USED IN CONJUNCTION
WITH OFF ROAD MOVEMENT SYMBOL TO IDENTIFY
HOLDING AREAS

TRAFFIC FLOW SYMBOLS



TO THE FLOT



FROM THE FLOT



AXIAL ROUTES

- RUN GENERALLY PERPENDICULAR TO THE FLOT
- REPRESENTED BY A SOLID LINE
- NAMED BY AN ODD NUMBER OR PICTURE



LATERAL ROUTES

- RUN GENERALLY PARALLEL TO THE FLOT
- REPRESENTED BY DASHED LINES
- NAMED BY AN EVEN NUMBER OR A WORD

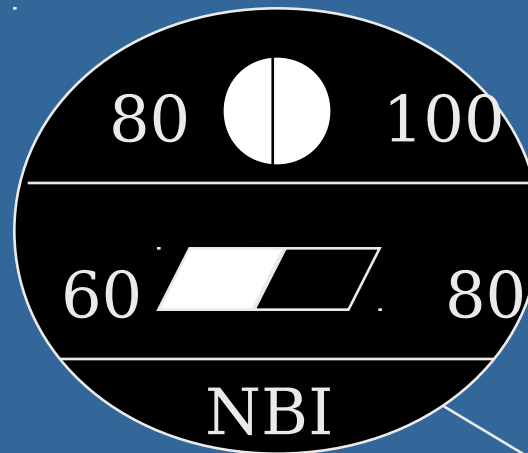
FULL (NATO) BRIDGE SYMBOL

(TWO WAY)

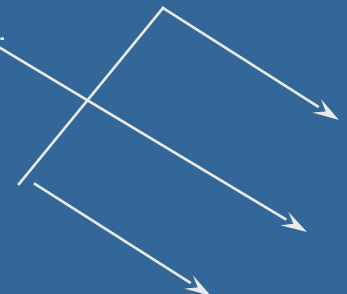
(ONE WAY)

OVERHEAD
CLEARANCE

OVERALL
LENGTH



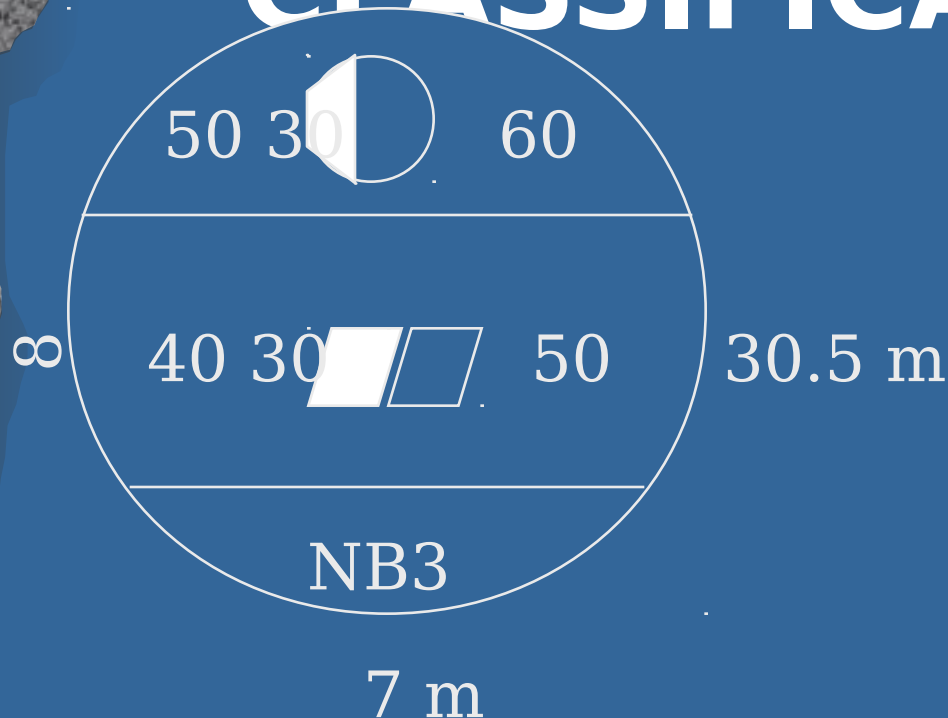
TRAVELED WAY
WIDTH





WHEN DO BRIDGE SYMBOLS REQUIRE MODIFICATION?

BRIDGE CLASSIFICATIONS

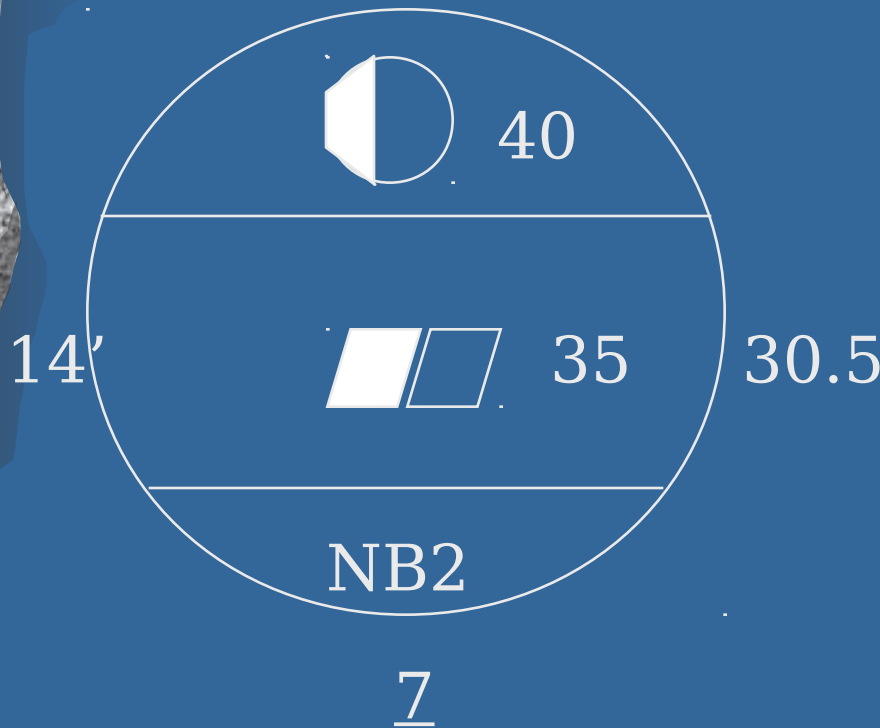


30.5 m

--THE TWO-WAY
CLASS OF ANY TWO
LANE BRIDGE IS
DOWNGRADED IF
THE WIDTH OF THE
BRIDGE IS LESS
THAN THE
MINIMUM
STANDARD

	Limited Access	Single Lane	Single Flow	Double Flow
Wheeled	At least 3.5 m	3.5 - 5.5 m	5.5 - 7.3 m	Over 7.3 m
Tracked and heavy	At least 4.0 m	4.0 - 6.0 m	6.0 - 8.0 m	Over 8 m

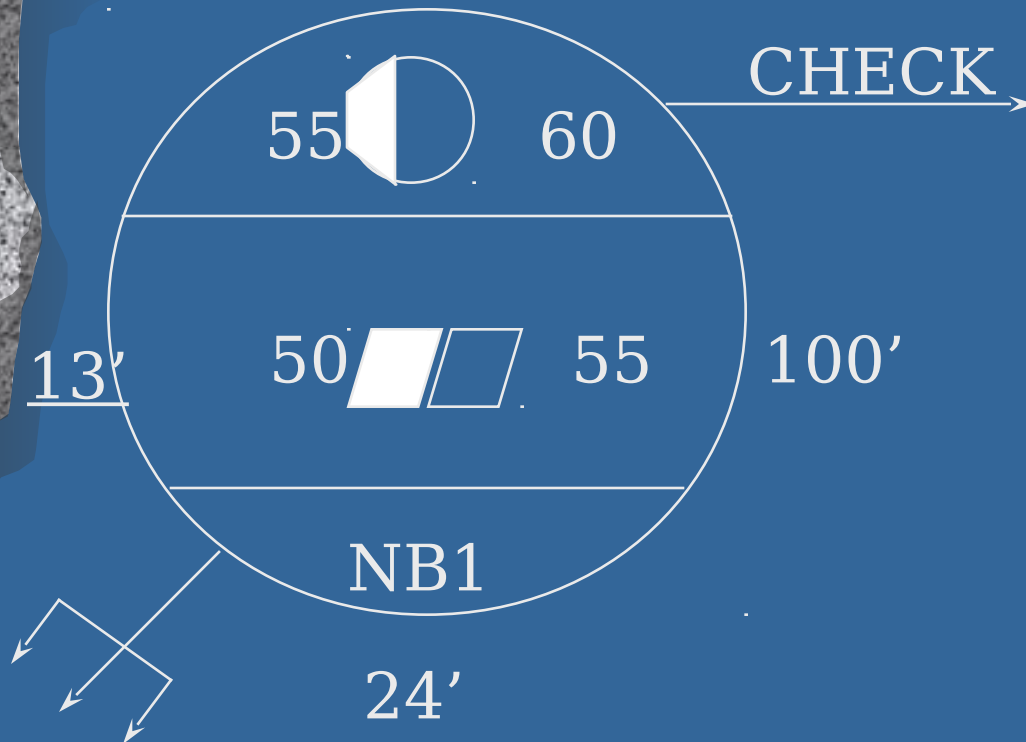
BRIDGE CLASSIFICATIONS



--ANY WIDTH OF A
ONE LANE BRIDGE
IS LESS THAN
MINIMUM
STANDARD IS
UNDERLINED

FM 5-170, TABLE 5-1

BRIDGE CLASSIFICATIONS



MIN. OVERHEAD CLEARANCE	
BRIDGE CLASS	MIN. OVERHEAD CLEARANCE
UP TO 70	4.3M OR 14 FT.
ABOVE 70	4.7M OR 15.5FT

IF THE OVERHEAD CLEARANCE IS LESS THAN THE MINIMUM STANDARDS, IT IS UNDERLINED



DA Form 1248

ROAD RECONNAISSANCE REPORT



PLATOON LEADER'S INVOLVEMENT

- EXTRACT INFORMATION FROM THE OPERATION ORDER
- ISSUE WARNING ORDER
- SELECT AND ORGANIZE RECON TEAM(S)
- REVIEW PERTINENT INTEL AND TACTICAL SITUATIONS
- ISSUE OF ORDER
- MONITOR PROGRESS OF THE RECON
- RECEIVE INFORMATION AND DEBRIEF FROM TEAM(S)
- CHECK FORMS AND DATA FOR ACCURACY & COMPLETENESS
- ASSEMBLE INFORMATION IN LOGICAL SEQUENCE
- ENSURE REPORT FULFILLS REQUIREMENTS
- SUBMIT REPORT TO ORDERING UNIT